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June 8, 1995

G. Duane Crutchfield Ash Grove Cement Company P.O. Box 51 Nephi, Utah 84648

Plan Revision Review, Ash Grove Cement Company, Learnington Plant, M/023/004, Juab Re:

County, Utah

Dear Mr. Crutchfield:

The Division has completed a review of your draft Notice of Intention to Revise Large Mining Operations for the Leamington Plant, located in Juab County, Utah, which was received March 15, 1995. After reviewing the information, the Division has the following comments which will need to be addressed before tentative approval may be granted. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.

R647-4-105 - Maps, Drawings & Photographs

105.1 Topographic base map, boundaries, pre-act disturbance

This submission did not clearly identify a "Base Map". The map submitted which comes closest to being a base map would be drawing #6035, "1" = 400'-0". This map does not contain property boundary or surface ownership information. This drawing has a date of 12/10/79. Does this drawing accurately present the current surface facilities and mine disturbances? Please provide a base map which includes the items listed under section R647-4-105.1. Please include private and federal land ownership boundaries and county boundaries on the base map. Existing permit boundaries, disturbed area boundaries, and proposed permit boundaries should also be included on the base map. At least one township, range and section point of reference should be included on the base map and surface facilities map. These boundaries should be included on the surface facilities map.

The MR-LMO form refers the reader to drawing AG-01 under section R647-4-105. This drawing does not completely satisfy section 1 or section 2 of this rule heading. (AAG)

The map submitted as "Ash grove Cement West Learnington Quarry" is useful to show proposed disturbance and existing disturbance. The copy submitted to the Division is very difficult to read/interpret. Please provide another copy with appropriate legend and bolder lines or cross-hatching differentiating between the various treatments. Post mining drainage, etc. could also be included on that map. (TM)

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105.2 Surface facilities map

This submission did not contain a current map of the surface facilities. The reader is referred to the existing permit, however, the 1979 map of surface facilities does not accurately depict the current facilities. The borders for the Shale Placement areas, current mining limits, and proposed mining limits on Drawing AG-01 are difficult to see. Please make these border more distinct by increasing their line width or using other means.

Permit borders shown on the "Proposed Operations Map" drawing #6056 received December 15, 1979 were superimposed by the Division on drawing AG-01 using a light table and significant topographic features to match with. The border for the Limestone Quarry Area on the 1979 map does not match the border shown for the current mining permit limits on the 1995 drawing. The 1995 drawing does not include the 1979 Waste Disposal Area or Quartzite Quarry. Please modify drawing AG-01 to include: roads, a township-range-section marker for reference, drainage control structures, and other pertinent features as listed under this rule section. (AAG)

105.3 Drawings or Cross Sections (slopes, roads, pads, etc.):

- <u>105.3.12</u> It is unclear from this submission whether any roads, pads, or other earthen structures will remain as part of the postmining use. If any of these features are to remain a cross sectional drawing of their configuration after reclamation will need to be provided. (AAG)
- <u>105.3.13</u> It is unclear from this submission whether any water impounding structures with embankments greater than 20 feet in height or greater than 20 acre feet in storage capacity will remain as part of the postmining use. If any of these features are to remain a cross sectional drawing of their configuration after reclamation will need to be provided. (AAG)
- <u>105.3.14</u> The submission did not contain maps identifying surface areas which will be disturbed but not reclaimed. The absence of such drawings would imply that all disturbed areas will be reclaimed. If this is not the case please identify these areas or features on the appropriate drawing. (AAG)
- 105.3.15 The application lacks any specific information on postmining drainage. It is appropriate that the reclamation plan contain descriptions of drainage patterns following mining. There will be large pad areas left with no apparent provisions for post mining drainage routing (i.e. channel construction, etc.). Please discuss and show your intentions for post-mining drainage configurations. The major waste area proposed is a valley fill and as such, drainage will probably have to be routed along one side of the fill and down the face. Please describe how this will be accomplished and how the channel will be protected. (TM)
- <u>105.3.17</u> A "Reclamation Treatments Map" for all proposed new areas will need to be provided. This map should be a version of the surface facilities map with additional layers/crosshatching to represent different reclamation treatments. The areas shown on

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this map should correspond with the areas/acreages used in calculating the reclamation cost estimate. (AAG)

A 'reclamation treatments' map needs to be provided which identifies areas that will receive different seed mixes, topsoil redistribution depths, other reclamation treatments, as well as identifying areas for which various variances have been requested. (LMK)

<u>105.3.18</u> - The 1979 "Final Contour Map" #6057 does not provide final contours of Shale Area 1 and 2. Please provide a cross sectional drawing depicting the configuration of these areas after reclamation/regrading. Please show the location of these cross sections on the appropriate surface facilities map. (AAG)

105.4 Photographs

If recent copies are available, the use of Aerial photographs as seen in the mine office conference room, might be helpful to relate current disturbance and the area of future disturbance. (TM)

R647-4-106 - Operation Plan

106.2 Type of operations conducted, mining method, processing etc.

Chapter 4, section 4.2 of the submission does not make sense. Please clarify. Please provide a more detailed description of the mining methods, i.e. drilling and blasting pattern, blasting agent, cast blasting?, primary crusher, secondary crusher, mobile conveyor, main conveyor, on site processing, etc. Are there any deleterious or acid forming materials generated/exposed during operations? If not, please explain why. Section 4.3 of the submission refers to some modified blasting for the last few rows of the final highwall configuration. Please describe this modified blasting. Section 4.2.1 Phase 1 describes a phase of mining but contains no specific time period for this phase. Please provide an estimate of the length of time required for each of the mining phases. Section 4.2.4 mentions the "bridge" and later mentions that this is not included in the drawings. If this feature is part of the proposed plan please show the location and the footprint of the fill area for this bridge on the appropriate drawing. Page 4-3 of the submission mentions that no pits are currently proposed for backfilling. Is pit backfilling a possible option? Has this been evaluated? The Division encourages pit backfilling whenever possible. How will the waste material be placed? (end dumped by trucks, conveyor, compacted, etc.) Section 4.2 of the submission mentions that no topsoil exists. Please provide justification for this statement such as sampling attempts, etc. Section 4.3 of the submission mentions the runoff and sediment are controlled in the active quarry area. Please explain the means used to control runoff and sediment. What is the basis for the size of runoff and sediment control structures? (AAG)

106.3 Estimated acreages disturbed, reclaimed, annually.

The figures included in the plan show the creation of some significant valley fills in the waste disposal areas. What is the additional acreage proposed to be disturbed as part of the revision? What is the proposed acreage to be disturbed annually for this revision?

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Will any acreage be reclaimed annually? The amount of acreages disturbed on a life of mine basis at specific intervals is not clear. On page 3-1 of the plan it states that 220 acres of disturbed land exists currently and that 300 acres of additional disturbance will occur over the next eight years. On page 4-1, it states that 533 acres of additional phased disturbance will occur, making what appears to be 753 acreages of total disturbance. Please clarify these amounts of disturbance and relate all disturbed area numbers to specific figures or maps. (TM & AAG)

106.4 Nature of materials mined, waste and estimated tonnages

Please provide a description of the physical properties of the waste/overburden to be generated and an estimate of the annual tonnage to be produced. Table 4.3 of the submission lists tonnages of shale, but provides no timeframes for the amounts shown. (AAG)

106.5 Existing soil types, location, amount:

There is no soil data for the expansion area. While the existing permit identifies suitable soils in the area for reclamation, as per commitments in the reclamation plan, topsoil is being salvaged in the waste disposal areas (the amount of soil is not reported). An order 3 survey and soils map needs to be provided for the expansion area. If suitable soils exist, then an appropriate soil management plan will need to be developed. (LMK)

106.6 Plan for protecting & redepositing soils:

From our site visit of May 2, 1995, it appeared that only limited amounts of soil material is available for salvage and redistribution (the Division does not expect Ash Grove to salvage topsoil in areas where it would be unsafe to operate equipment), the soils management plan will need to identify how topsoil will be protected (from wind/water erosion), location of any topsoil stockpiles, and how it will be redistributed for reclamation, including thickness of replaced soil. Direct haul and placement of soil on areas being concurrently reclaimed is an appropriate option to stockpiling. (LMK)

106.7 Existing vegetation - species and amount:

The current permit contains limited vegetation data for three vegetation community types: Sagebrush, Browse-Shrub, and Pinyon-Juniper. This data consists of percent composition of the major species in each community based on production. Lacking from this data is vegetation cover levels which is used to establish revegetation success standards in accordance with Rule R-647-4-111. It will be necessary to obtain cover values from all plant community types that will be affected. A species list will also need to be generated for any new plant communities that exist within the expansion area. (LMK)

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106.8 Depth to groundwater, extent of overburden, geology

No information has been submitted regarding the use of groundwater other than that water rights and a well have been obtained to use for the operation. Location of the well should be shown on the appropriate resource map and a description of the aquifer from which the water is drawn included in the plan.

During the site visit on May 2, 1995, the operator mentioned the existence of some monitoring wells found adjacent to an old waste dump area and that this was being monitored by Martin Marietta. This area is found within the current permit area and as such the information on the construction of those wells and the monitoring data collected, would help provide some more information on the ground water in the area.

A copy of any groundwater permits and any additional information pertaining to groundwater resources in the area needs to be included as part of the mining and reclamation plan. (TM)

106.9 Location & size of ore, waste, tailings, ponds

Drawing AG-01 of the submission includes an outline of the shale placement areas. Page 4-3 of the submission states the elevation of the shale placement area will be at 6040 feet. Using elevations shown on the drawing, this implies a vertical height of 40 feet is shale area 1 and a vertical height of 740 feet (6040 - 5300) for shale area 2. What is the proposed vertical height of these waste dumps?

During the inspection of May 2, 1995, Ash Grove staff mentioned that Martin Marietta remains responsible for a dump area within the current permit area. No record of this split ownership could be found in the Division files. Transfer documentation in the Division files do not exclude an area within the current permit from Ash Grove's responsibility. Recent discussions with the USFS staff indicate they have no documentation of this split responsibility either. Was this split ownership a part of the sales transaction between Ash Grove and Martin Marietta? Please provide some additional information describing the area which Ash Grove claims Martin Marietta is responsible for, and the nature of that responsibility. It is unlikely that the Division can recognize and sever this portion/parcel of reclamation liability from Ash Grove's permit under the present circumstances. (AAG)

R647-4-107 - Operation Practices

107.1.12 Disposal of trash, scrap, debris

Please describe how trash, scrap, and debris generated during the proposed operations will be disposed of. AAG

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107.2 Drainages to minimize damage

The submission does not mention impacts to any drainages, although from the drawings it appears some drainages will be affected. Please describe any affected drainages and the proposed measures to mitigate affects/impacts to these drainages. (AAG)

The comment found in Appendix A is not adequate to demonstrate stability and erosion protection. It appears from the plan that there will be many long disturbed slopes in the waste disposal areas and as such erosion control does appear to be a issue. Please explain why erosion will be non-existent except for periods of great rainfall. Erosion was evident on dump slopes during our site visit on May 2, 1995. Does this assumption relate to final slope configuration, surface roughness, soil type, revegetation success, or considerations for land shaping? The current response is not adequate and more details must be supplied regarding final drainage configuration and erosion control considerations for waste dump areas and dump slopes. (TM)

107.3 Erosion control & sediment control

The operator has not supplied any information to assess the background erosion and sediment production based on site-specific or regional conditions. This may or may not be necessary based on the discussion and use of good engineering practices for erosion control in the final reclamation plan.

The final slopes are referenced in the old reclamation plan as no greater than 3.5:1. In Chapter 7 variances are requested to leave all reclaimed slopes at no greater than 2:1, and on the final contour map the waste disposal areas show 1.66:1 slopes. Please explain these inconsistencies. (TM)

107.4 Deleterious material safety stored or removed

The operation of the facility and the mine must be discussed from the aspect of storage of deleterious materials. Please reference a Spill Prevention Control and Containment (SPCC) plan if one exists and discuss the handling and storage of deleterious materials found on site. (TM)

107.5 Suitable soils removed & stored:

Please refer to comments under R647-4-106.5 & 106.6. (LMK)

107.6 Concurrent reclamation:

Please describe plans for reclaiming areas no longer needed for mining operations. A description of revegetation test plots that have been implemented as well as any results should also be included. (LMK)

It is our opinion that contemporaneous reclamation is very prudent. The operator will be able to try reclamation techniques and determine their success or failure on a small scale and adjust future projects on reclamation successes accordingly. In the current

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scenario of using the waste disposal area in the Canyon to the south of the current operation, it would be an appropriate consideration to reclaim each lift and its face as the waste disposal area was constructed. This methodology would allow the waste disposal area to be reclaimed as it was constructed and not have a long large slope at the end of disposal to reclaim all at once. The regrading and terracing of dump slopes and the routing of all road drainage away from the outslopes is an appropriate consideration as well. (TM)

R647-4-108 - Hole Plugging Requirements

No information has been given regarding drill holes or the plugging of drill holes. This information must be supplied. All drill holes and water monitoring holes must be plugged according to applicable regulations. (TM)

During the recent inspection Ash Grove staff pointed out some monitoring wells around the dump which Martin Marietta is still responsible for. The plugging and decommissioning of these wells will need to be addressed and included in the reclamation surety even though these wells are not part of the current revision proposal. (AAG)

R647-4-109 - Impact Assessment

109.1 Impacts to surface & groundwater systems

Groundwater:

A general statement regarding groundwater is found in Appendix A:

"In the bottomland near the river, an aquifer has been located with water rights being established. Process water and domestic water will be acquired from the well in the general vinicity of coordinates 24,900N, 20,200E, which will be pumped to a tank for use as needed."

The permit should plot the location of all wells on the resource map requested and discuss the completion of any wells and final disposition of these wells upon reclamation. Also, are there any springs within the area of mining disturbance or reclamation?

Surface Water:

The plan needs to show and discuss the reclamation of surface water drainages. It appears from the operation plan that Shale Area #1 will totally fill in what appears to be an emphermal drainage or create a valley fill. How will drainage traverse this valley fill and how will it be constructed. Crossing of the Canyon to the west, whether it will be a valley fill or a road along the ridge should be discussed in terms of its impact on surface water drainage.

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The pit area will be a large flat area where surface drainage and final disposition of that drainage must be discussed and considered. The benches established with the final deposition of the Shale areas are also areas where some consideration to surface drainage may be appropriate, as well as, the final outslopes of the Shale waste disposal areas.

Will drainage still flow to the Sevier River in existing channels or will reclaimed channels be created across the plant site? (TM)

Section 5.1 of the submission states "All areas mined or disturbed by shale placement will be blended into surrounding area, as shown in drawing AG-01. The final shaping of the shale placement areas will be contoured to minimize any potential erosion." Please describe how these areas will be contoured and shaped to minimize erosion. What will the final slope configuration be? What will the final surface roughness be? The submission does not include any mention of drainage blockages. Please provide a description of the impacts to drainages as a result of this proposal. What measures are proposed to mitigate these impacts? (AAG)

109.2 Impacts to threatened & endangered wildlife/habitat:

Sections 5.4 and 5.5 of the submission state that no threatened and endangered plant or animal species will be impacted by this proposal. The original assessment of impacts to threatened and endangered species was conducted over 15 years ago. A current assessment needs to be provided which includes those species listed during the last 15 years. It is the Division's understanding that this assessment may be available through the Forest Service. If so, please make this information a part of the application under this section. (LMK)

109.3 Impacts on existing soils resources:

See comments under Rule R647-4-106.5 & 106.6. (LMK)

109.4 Slope stability, erosion control, air quality, safety

See comments under Rule R647-4-107.3 (TM)

Section 5.6 of the submission states the "use of this equipment is virtually the most effective approach to enhancing air quality." Please describe the equipment referred to and how this equipment enhances air quality. (AAG)

Please describe how public access to the (mine site/proposal area) is controlled and how this access will be restricted after final reclamation. Will there be a need to restrict public access above or immediately below the highwalls after final reclamation? If so, please identify the pertinent areas and describe how this will be accomplished. (AAG)

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109.5 Actions to mitigate any impacts

Please provide a description of the measures proposed to mitigate the impacts listed above. (AAG)

R647-4-110 - Reclamation Plan

The latest permit revision indicates that the reclamation plan is the same as for the current permit. Under the present rules, the reclamation plan in the current permit lacks sufficient detail and specificity. The information listed in this section of the rules will need to be provided for the proposed expansion area. (AAG)

110.1 Concurrent & post mining land use

What is the post mine land use for the proposed area? (AAG)

110.2 Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Please describe the manner and extent of the reclamation of the roads, highwalls, slopes, impoundments, drainages, pits, ponds, and piles included in this proposal. What is the final configuration of these features after final reclamation? (AAG)

110.3 Description of facilities to be left (post mining use)

According to section 6.2 of the submission, no surface facilities are proposed to remain after final reclamation under this proposal. This would include, but not be limited to buildings, utilities, roads, pads, ponds, pits and surface equipment. If this is not accurate, please revise the permit application accordingly. (AAG)

110.4 Description or treatment/disposition of deleterious or acid forming material

The submission does not mention any deleterious materials. Please explain why there are no such materials at this site. (AAG)

110.5 Revegetation planting program:

The operator needs to provide details of the revegetation planting program. Specifically, what species will be planted and at what rates. It is recommended that a minimum of 10-12 different species of grasses, forbs and shrubs be included in each seed mix. Plans should be based on pre-mining vegetation communities, intended post mining landuse and results from any test plots. The Division can provide assistance in developing a seed mix(es) if requested. (LMK)

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R647-4-111 - Reclamation Practices

1.14 Posting warning signs

The submission does not mention the posting of signs warning the public of any dangers or hazards. If this was not an oversight, then please justify the lack of these signs. (AAG)

1.15 Constructing berms/fences above highwalls

The submission does not mention the creation or use of barriers, trenches, gates, etc., to prevent public access above the highwalls. Please explain why these features are not necessary to protect the public. AAG

111.2 Reclamation of natural channels

2. Drainages - If natural channels have been affected by mining operations, then reclamation must be performed such that the channels will be left in a stable condition. Consideration for actual and reasonably expected water flow, so as to avoid or minimize future damage to the hydrologic system, must be assessed and appropriate design plans developed.

The plan has not adequately addressed the final deposition of surface water drainage from the pit, the shale disposal areas, or drainage through the facility area.(TM)

111.3 Erosion & sediment control

3. Erosion Control - Reclamation shall be conducted in a manner such that sediment from disturbed areas is adequately controlled. The degree of erosion control shall be appropriate for the site-specific and regional conditions of topography, soil, drainage, water quality or other characteristics.

Final erosion control plans have been based on statements like those found in Appendix A and Chapter 6. This not adequate as explained previously, because of the lack of specific details, in regards to what specific reclamation techniques will be used to stabilize slopes.

- "There is no erosion currently except during the 100-year storm." (Appendix A)
- "The shale and non-product material placement areas will be placed at near to the final contours as an operational plan. (please note: the operational plan shows 1.66:1 slopes) Only minimal shaping to assure any erosion control may be needed. "(Chapter 6).

These statements may apply to current undisturbed lands, but may not be related to reclaimed soil materials and surfaces. Based on the fact that long reclaimed slopes will exist following reclamation, and materials of possibly different stability (green shale) will be found on the surface, more detailed information will be required on exactly

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what techniques will be used to control erosion on reclaimed surfaces (i.e. surface roughness, contouring, ripping, mulching, etc.). (TM)

Section 6.5 of the submission states that drainage and sediment control will be minimized by design and the operational plan. Please describe specifically how these controls are minimized. The submission also states the current permit approach will be used in addition to the proposed plans as needed. Please describe the details of the current permit and proposed plan relevant to drainage and sediment control. (AAG)

111.6 All slopes regraded to stable configuration:

See comments under Rule R647-4-112. (LMK)

111.8 All roads & pads reclaimed

The final disposition of roads and pads is unclear. The operator needs to explain if any culverts or surface water conveyances will be left in place following reclamation and how those structures will be maintained. Roads and associated compacted surfaces tend to provide the most surface runoff and as such should be deep ripped/roughened and reclaimed when no longer needed. (TM)

111.9 Dams & impoundments left self draining & stable

No dams or impoundments are proposed, but the existence of sediment ponds as part of the post mining land use might be appropriate, if they are sloped to provide safe access for wildlife, designed to be stable, etc. (TM)

111.12 Topsoil redistribution

Apparent conflicts in topsoil handling need to be resolved. Apparently, the original reclamation plan involved salvage and redistribution of topsoil. After stating that there is virtually no salvageable soil materials (page 6-1), it is stated that the original plan will be followed. Since variances for topsoil salvage or redistribution were never requested (or granted), it is assumed that these activities will take place. See also comments under Rule R647-4-106.5 & 106.6. (LMK)

The submission also states the revegetation plans is the same as the current permit. The existing permit calls for salvage of clay and silt from the shale disposal areas for use in reclamation. This is not mentioned in the latest submission. The existing permit states that the dump slopes will be less than 3 horizontal to 1 vertical. The latest revision states that the dump slopes will be approximately 30° (1.7h:1v). Please explain these inconsistencies. AAG

R647-4-112 - Variance

The operator has requested variances to meeting the standards of Rules R-004 111-6 and 111-7. We have assumed this was a typo which should have read $\underline{R647-4-111.6}$

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(Slopes) and R647-4-111.7 (Highwalls) respectively. Section 7.2 of the plan states that "where possible, the final reclaimed slopes at the mine site would be no greater than 2 horizontal to 1 vertical . . . which is stable for these materials . . . ". If the operator can demonstrate that the reclaimed slopes are stable and will support vegetation at a 2H:1V slope angle, then perhaps a variance is not necessary. Please clarify. (LMK)

Section 7 of the submission appears to request two variances from the same rule. The first request is unclear. The first request mentions final reclaimed slopes of 2H:1V. Division rules require highwalls to be at 45° (1H:1V), therefore, any highwalls which are of a lesser angle do not require a variance. The first variance request does not include a written description or map description of the area in question. The second variance request does not identify a specific area affected by this request. Please provide more details describing the historic highwall such as location, geology, proximity and similarity to the proposed highwall. How long has the historic highwall been in place? Please provide justification for extrapolating the conditions and stability of the historic highwall to the proposed highwall area. (AAG)

The submission contains no request for a topsoil variance, yet the proposal states there will be no topsoil salvage or replacement. Pursuant to our site visit of May 2, 1995, the operator will need to request a variance from salvaging topsoil on slopes that are too steep to safely operate equipment. These areas should be identified on a map. (LMK)

In addition, the submission does not contain a request for a variance from revegetation, yet there are no plans for revegetating the pits, pit floors, highwalls, benches or roads. A request for a variance from the relevant rules will need to be included as part of the proposal. All variance requests should be formatted according to section R647-4-112 of the Minerals Rules. (AAG)

R647-4-113 - Surety

The submission states "The currently proposed activities will change the amount of total work required for reclamation. It will not change the amount of reclaim work per acre as originally planned for." No description of the reclaim work per acre is included in the submission. Division records do not contain any details of the specific reclaim work in the original permit. The original reclamation surety estimate was prepared by the US Forest Service. They do not have any additional information regarding the specifics of the old surety amount. The old surety amount was recently adjusted by the Division for escalation only. The surety section in the submission contains no dollar amount, no disturbed acreage figure and no \$/acre (dollar-per-acre) figure. It appears that Ash Grove proposes to post a total reclamation surety amount based on extending the current average \$/acre amount to the new acreage. No information has been provided justifying the extension of the average \$/acre figure to the new area, such as feature ratios or percentages in new area compared to the current permit. Due to the lack of specific details such as acreages, volumes, reclamation treatments, etc., this surety proposal is unacceptable. This submission does not contain sufficient detail for the Division to calculate or verify a reclamation surety estimate. The information

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> requested in this review will be needed in order to verify or calculate an estimate. (AAG)

The Division will suspend further review of the mine NOI until your response to this letter is received. If you have any questions in this regard please contact me, Tom Munson, Tony Gallegos, or Lynn Kunzler of the Minerals Staff. If you wish to arrange a meeting to sit down and discuss this review, please contact us at your earliest convenience. Thank you for your cooperation in completing this permitting action.

Sincerely,

D. Wayne Hedberg Permit Supervisor

Minerals Regulatory Program

ib cc: Gary Doolittle - 438 Gladiola Street, Golden Co. 80401

Ted Fitzgerald, USFS, Fish Lake NF

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